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PHILOSOPHIC SANCTION OF AMBITION

EVERYBODY has heard of the political philosophy, associated variously with the names of Nietzsche, Treitschke, and Bernhardi, by which the present prodigious efforts of the German nation are clearly explained and justified. A fact not so often noticed, though even more interesting, is that this political philosophy has far deeper roots in speculation than those somewhat unsavory names might suggest. German policy is plainly consonant with a naturalistic view of the moral autonomy and deadly competition of nations and ideals: it also expresses, in its internal motives and temper, the transcendental theory of an Absolute Will. Doubtless an unfriendly critic might urge that both these speculative sources are tainted or even poisonous; but it is certain that from both flow impetuous currents of thought and feeling, which mingle eloquently together. It is idle to deny that the spectacle of nature and history, as groping observation reveals it, stimulates the self-esteem of those who feel they are strong and tempts them to use their strength, when the time comes, without mercy. We need not appeal to Darwin in the matter, nor strain the frigid *constatation* of natural selection into a spur to violence, especially as violence is not always a sign of strength nor a means to survival. A glance at the human world, without any pretensions to formal science, is eloquent enough: and the Germans have in their own history an especially provocative record of expansion and masterful migration, in which, to be sure, the spirit of the conqueror was often seduced by the new scene, and was poured out to irrigate a foreign field of culture, if not to waste itself in sands. This old frustration, often repeated in minor ways since, still weighs on the nucleus of the nation, which feels its strength to be as exuberant as ever, and its achievement and position nothing to what they should be. Why should the Germans refrain from what every prince or people has done when they felt themselves stronger and better than their neighbors? Why should they not plunge in, like them, with a courage that is half greed and half heroism, to reburnish the dull face of the world and make it shine with their own glory?

Is not wild spontaneous life everywhere non-moral and aggressive towards what remains outside, while creating an internal morality, strict in proportion as that life is keen and well-organized?

So much for the "will to power"; but there would be some want of insight or of candor in not admitting that this present inspiration of the Germans is faithful to that of their great systems of philosophy; faithful also (if we care to plumb such opaque depths) to the instinct underlying the Reformation, to the original element in German poetry and music, and even to the cast of Teutonic mythology. This consecutiveness in the national genius, in spite of much waywardness and many a check, may be taken for a proof that the German leaders of to-day are no novel monsters, but deeply authorized spokesmen of their nation and of a certain perennial, perhaps fundamental, factor in human politics. The same consecutiveness, if we prefer, may be taken for a proof that the German mind has never yet been tamed or domesticated in the world, but is persistently barbarous, and that its greatest prophets, in analyzing reason and conscience, have always merely disintegrated them, and in principle relapsed into animal faith. Both conclusions, I think, are largely justified, and they are far from incompatible. What above the temporal issues of the present war, incalculable as these are, makes the magic and eternal interest of the moment is precisely this glowing challenge flung against fate by a nation conscious of its vitality, conscious of its ideals, admirably devoted to the task of making them effective, and, behind all that, half conscious of the doom that sooner or later must overtake its ambition; not because its present enemies need prevail—that is a question of circumstances—but because the plunge of ambition, like that of life itself, as the animal soul takes it, is always a plunge in the dark, into the infinite, into the all-engulfing yet fertile bosom of chaos.

Of this doom, I say advisedly, the Germans are only half conscious. Few of us have the courage to face in thought the tragic situation which every living creature faces daily in action. This tragic situation, in that the force of the infinite infinitely exceeds that of any living will, is presupposed at bottom in the romantic and transcendental philosophy of the Germans and lends it, to my mind, its haunting depth and applicability. Until Schopenhauer and Nietzsche let out this secret, it was religiously kept, wrapped up in the ambiguity inseparable from the transcendental method; but the sad secret was always there. A logic of will and imagination must needs be confined to the subjective; it can not deal with the conditions of its own operation. Hence the first act of the will, in Fichte, had to be "shot out of a pistol," and the career of the world, in Hegel, had to end abruptly in himself. Though these

philosophers took good care not to say so, all they described was evidently but a closed, private, fleeting, ungrounded experience, a dream absolutely self-centered and absolutely precarious, a very idealism! They would have urged, had they been pressed, that nothing else could ever be described or discovered; that all life was essentially an agitated ignorance. Nevertheless it was one's duty to live on, and "to call spirits from the vasty deep" to do one's bidding. A dizzy enterprise, surely, but a most romantic one. In vain the soft-minded majority, even of professed philosophers, clung to sluggish and temporizing habits of thought, and averted their eyes from the somber background of their heroic national philosophy, trying to transplant it into the snug moralistic cosmos of Greek and Christian tradition. In genuinely German thought which is heathen the opposite is what happens: each successive conception of the world, each successive religion, expresses but one phase of absolute action; it is the scenery painted by the mind for one act in its interminable drama; and since this creative genius is absolute and poetizes in a void, there is no knowing when, how long, or how perfectly it will come to expression. It lives without conditions and consequently without guarantees.

An eternal idea, however, was understood to be implicit in this universal romantic effort; and this idea was deputed, by a pious confusion, to guarantee its own fortunate development, broken and ignominious as this development actually is; as if the multiplication table had been deputed to determine what school-boy should recite it, and what mistakes he should make. Similarly the moderates among German Nationalists often recoil from the heroic rôle of absolute adventurers which the deeper instinct of the race is bold enough to assume and to live out with exultation, even to a tragic end. Instead they persuade themselves that God, who once inscrutably chose the Jews to be his people, may now no less inscrutably have chosen the Germans, and promised them the possession of the earth if they prove faithful to his law, *which is imprinted in their hearts.* They do not see that this last fact is sufficient, and the rest mythology. Probably, too, they deprecate war and resent the imputation of ambition. Their patriotism dwindles into pious affection for the homelier aspects of their country and admiration for the portentous equipment, learned and military, with which it has armed itself; but they forget the soul and purpose of the whole, and the boundless half-conscious ambition which it has long been toiling to satisfy. In defending they stultify themselves; as if an absolute self-justified impetuosity were not the thrilling side of the German spirit, at once naïve and fierce, which alone raises it nowadays above the pervasive indecision. A majority of trimmers, however, is always to be expected: and in

this case it need not keep us from regarding the brave and clear-sighted few as the true interpreters of their country, especially as it is they, at this juncture, who are visibly guiding its destinies.

GEORGE SANTAYANA.

THE MENTAL ANTECEDENTS OF SPEECH

IT is usually said, in discussing speech as a motor process, that an idea of some sort always starts the mechanism of speech. It also appears that one must distinguish in some degree at least between ideas and words as incentives to vocal utterance. When we make this distinction two problems must be considered: (1) How does thought get translated into words as one prepares to speak? (2) What bearing does this have upon actual vocal expression? The first of these problems is by far the more important, since, so far as consciousness is concerned, thinking the word is practically the only condition necessary for its utterance. In attempting a statement of the problem it is necessary to distinguish different cases. With reference to the relation between thought and language, one must have noticed that there are many instances in his own experience in which the problem could not arise at all. Very frequently one talks without noticeable antecedent imagery. In other cases one has a vague notion of what is to be said in addition to talking, but no definite words or separate images that correspond to the words. In other cases words are thought first and then judgment is passed on them before they are uttered, and there is also the general notion of what is to be said in advance of the words, and before the separate words develop. In still other cases the processes reach a maximum of fullness. There is first the anticipatory intention, then a further elaboration as thought, then translation into words, and finally the vocal utterance. This most complete form is the least frequently noticed, but since it is possible, and actually does occur, it may perhaps be made the type for analysis and explanation.

A theory that can be made a starting-point for discussion is offered by Wundt's assertion that development of the sentence in preparation for speech is nearly always analytic rather than synthetic. He insists that there is ordinarily in mind a complete idea of what is to be said before the sentence is formulated, and, furthermore, that the way from the anticipatory total idea to the sentence is ordinarily one of analysis. The idea is present in all its entirety before the sentence or its anticipatory thought elements present themselves. These part ideas or words are selected or analyzed from the total idea, and at the time they are thus selected they are seen to have certain relations to each other; by the very process of analysis or by

virtue of their earlier connections they have or are given certain relations to one another that determine their connections in the sentence as a whole. On this view, discrete thought would be at the most a process of elaborating what is earlier contained in a total idea. The advantage of this way of putting the problem, from Wundt's point of view, is that it avoids the necessity of raising the question of how the elements of the sentence are put together. They are found together; the question is only one of how they are made distinct in the total complex or matrix in which they are found.

Unfortunately, Wundt does not make very clear the nature of the preliminary idea. It is apparently for him something almost as definite as a real perception. If one examines one's own consciousness there are occasions that seem to harmonize with this picture, but these come, for the most part, when one is describing some event or object from memory, rather than when thought is more constructive. If one, for example, is endeavoring to describe a landscape, one sees it in the "mind's eye," if of the visual type, and then selects one feature after another for description. The objects are all there before analysis and description. This consists in selecting one feature after another and supplying the words that best describe them. But this is the only case in which introspection seems to justify the statement that there is a definite anticipatory idea that is analyzed and translated into words. Even here one might question whether the selection did not really add something to the picture that was at first in mind. Whether the process was not in part one of recalling elements of the original picture as well as merely picking out one part after the other. Certain it is that the picture in mind before analysis into parts and the picture as analyzed are not identical; the process of analysis has enriched the content. It is difficult to be sure that recall through association has not played quite as important a part as has mere analysis. But even this slight justification for the preliminary idea as holding the material that is to be obtained and described in language is absent in all other forms of description. When one is describing an object through motor or auditory recall, it is not all in mind at once, but one bit comes in at a time. There is no question of analysis in that case.

But while one can not take Wundt's description as seriously as he means it, still he emphasizes certain important features of the preliminaries of speech that must be taken account of in any theory or description. First, while we can not agree that the idea to be expressed is always definitely present in consciousness in advance of analysis and expression, yet it is certainly true that there is some foreshadowing of what is to be said before it is definitely prepared for expression. In the second place it must be admitted that the

same elements that give an inkling of what is coming also furnish the conditions that serve to unite the different elements of thought and of the sentence, or, more accurately, make the elements really belong together from the beginning rather than need uniting as is sometimes assumed by writers on language. On the other hand, it is logically impossible that the idea can both be present in advance of analysis and at the same time be developed by thinking. As a matter of fact (give this description the most liberal latitude possible in interpretation), it is very seldom that the actual process of preparing thought for utterance takes the form that Wundt indicates of a total idea, an analysis of that total idea, and then a translation of the parts into words.

One must in any discussion of the speech process go even farther than Wundt in insisting that any particular speech element can be understood only in its setting, in the general situation of the man at the moment, and in the general context of the individual thinker before any sentence is spoken. One sentence grows out of another, and still farther back one idea is the outgrowth of earlier ideas, so that one can not understand any single step or stage in a discourse unless one considers what has gone before it in the discourse, the general social situation in which the speaker finds himself, as well as the more remote bits of knowledge, and the earlier connections with the members of the group to whom he is speaking. If one were to sketch a list of the factors that are involved in thinking, one would have to begin with a statement of the problem, and this could only be stated if one were to go back to a fairly general purpose that had been developed gradually in the experience of the thinker. Now I am writing this sentence as a result of my intention to discuss the mental antecedents of sentences in general. That intention has developed gradually out of other problems, as the result of reading and observation that has raised the question whether one thinks before one speaks and how far thinking precedes this speaking and what form it takes. If one drops into this attitude from some purely non-professional train of thought, there is a fairly complete break in the train of ideas; the new series began where one was working last week or thinking yesterday on the same problem, but all that is remembered of what has been said before has its influence on the train of thought at the present moment. The first controlling influence on speech, then, is the group of antecedent experiences that in a sense constitutes this attitude and in a sense controls the attitude, which is renewed and aroused as I sit down to the typewriter with the intention of doing a little work on this particular topic.

But it is not implied that this intention necessarily carries with it the full details of all that is to be said. Much of the intention is

no more than a general idea of the problem to be solved. There are vague references to Wundt and the feeling that his theory is incomplete and one-sided. Notions of the influence of meaning and the possibility that the Würzburg schools and Woodworth's naked thought notion may play a part in the matter, that in any case they are all wrestling with the same problem and are probably all aware of the same group of facts and may really mean the same thing as a solution except that they are taking partial views of the total processes, and each is prevented from seeing the truth in the other's view by the different methods of approach. These different ideas are not clearly represented at one time; in fact, all that may be clear is that one must analyze this preliminary idea; the other elements flit in and out as the process of analysis proceeds and before anything is formulated in words, and before satisfaction with the result is sufficient to make it seem possible to formulate the attempt in words. There is nearly always some preliminary idea; one nearly always has the belief that it is sufficiently clear to stand formulation before the words begin to make their appearance, but it is not analyzed, the different parts are not represented as distinct, there is no foreshadowing of the form of the sentence before writing takes place, and still less before one speaks even in the somewhat formal process of lecturing without notes. The total idea that Wundt has in mind is apparently nothing more than this intention to say something when one begins to express any bit of abstract thinking and need be no more than that in connection with more concrete mental operations.

The form that this intention to say something takes varies from individual to individual and from moment to moment. In the experiments of Bühler and others it seems to be nothing more than the satisfaction that the subject is ready to speak, and this may be no more than the removing of inhibitions. In any case it comes in no particular imagery, certainly no imagery that a critical observer would say was adequate to what was to be said. In fact we may say in the light of present controversy that the total idea is nothing more than something that means what is to be said, rather than anything that resembles or *is* what is to be said. It can only be asserted in the most metaphorical sense that this is analyzed in the process of speaking. There is really nothing there to analyze, in the sense that one can analyze a painting or a landscape that is present in the world outside. In most cases one would not know that there had been anything in mind unless the formulation in words had taken place. Certainly one would not have known what was in mind were it not for the expression, and could one give to any one else an accurate description of the mental content that preceded the sentence, he

would not recognize it as the matrix from which the sentence had been chipped.

On the negative side, it seems that Wundt's description of the processes that precede speech is not adequate. How then does this intention become fulfilled; how do the vague foreshadowings of what is to be said actually take form? As has been implied above, this varies greatly with the material to be expressed. In the case of more abstract thinking which we have started to analyze it appears that the formulation of the idea first takes place in words. There is the preliminary intention, which may be sufficient for several sentences; then the words come as a result of association, first with the idea, then as a consequence of the connection between the words themselves under the influence of the more general purpose or intention.

It is more of a problem what determines the associations that start the sentence. That may come from the preceding sentence; it may come from the preceding train of ideas; it may be due to the fact that this is the first idea of a series put into words, that it seems to require particularly accurate statement or analysis, or because of the social environment at the moment; some one may have appeared, or it may chance that the idea that has presented itself promises to be particularly interesting to the companion with whom one has been sitting or walking in silence, or more frequently, where one has been with some one else, it may be in response to a question. The response to a social need, immediate or possible, present or in prospect, constitutes the more usual incentive. But very much of our more serious thinking is given the verbal form for the sake apparently of definiteness and of being tested as to its truth in that form. Part of the test may be that it is merely more definitely formulated and thus can be evaluated in its details. In rarer cases it may be put in the conventional forms of logic, more frequently in the unconventional, but more habitual forms that have been found to be adequate in practise. Often, too, the formulation is given that it may be ready for an imaginary audience, and the result accepted or rejected as past experience has shown the ordinary auditor or customary audience would accept or reject an argument of that form. In consequence of these different factors much if not most of adult thought, particularly serious abstract thought, is in words, even when the individual is alone and has no intention of preparing a future discourse.

Granted the general intention to express something, the preliminary intention to express some particular thing, which is indicated by a most general mental content that means that thing in the vaguest way, nothing seems to intervene between that and the appearance of the words in consciousness. If one is talking or the situation is one that demands or permits expression, the words come at once.

Occasionally, the formulation in words is slightly in advance of actual expression, but that need not be the case, and ordinarily is not unless one is talking in dictation or some other circumstance demands unusual slowness of speech. Most of the description of what intervenes between thought and formulation in language is of this negative character. No idea, or at least but the vaguest and apparently the most inadequate idea, precedes the appearance of the words, or even the actual speech or writing. There is never or extremely rarely a sequence of ideas that comes before speech and can be said to be sufficiently detailed to be translated into words. Speech comes at once as a result of the intention and of the conditions under which thinking takes place, and for no reason other than that the situation and fulfilment of the intention to speak demand the words.

In the large it may be said that the cerebral or mental mechanism of itself gives forth the words that are appropriate. What one can be seen to do is to pass upon this product as to its adequateness to the purpose in hand. This judgment may be passed either after the intention has been formulated in words, but before expression, or in ordinary conversation after the words have actually been spoken. In writing it is more usually the case that one thinks what is to be said first and then writes only after the sentence has passed inspection. In conversation one may reject an entire sentiment that presses for expression, one less frequently may notice that one has a word in thought just ready to speak that is not suitable, that will not pass the subjective censor, but much more often than in writing one actually gives expression to a thought and then sees that it is not what was intended. One must then modify, usually with an apology that that was not what was intended. Two problems naturally arise in connection with the problem. The first the one already mentioned and postponed: what is it that determines the word that shall come to mind?, the second how is one able to pass upon the expression that is thought of or that has been spoken to determine that it is or is not what one desired to say? Both processes are alike in that they can not be definitely observed by the speaker, but can only be studied indirectly through observing under what circumstances they go wrong and under what circumstances they lead to desired results.

The process of censoring is not unlike the processes of recognition and of passing upon the truth or falsity of a statement that has been heard or a conclusion that has been attained, or like the criticisms that are passed upon works of art, upon esthetic creations. It probably depends, like all of the others, upon the wide-reaching associates that have been developed in past experience, which are aroused, sometimes completely, sometimes latently or partially, by the words

as they are suggested or uttered. Often one notes that a word that has been thought of in one connection under the influence of one mental attitude or setting, will arouse an entirely different group of associates in a mind dominated for the moment by another idea. The second possible setting suddenly presents itself just after the phrase has been used, and the associations that result are seen to be not at all in harmony with the intention that is controlling the expression as a whole. On the purely formal side one may become aware after the formulation that some definite rule of grammar has been violated, or some other accepted generalization of good practise may suggest itself with which what has been said will not square. On the whole, however, the judgment is passed in terms of unformulated past experience. The sentence pleases or does not please at once. Then on the side of mere expression one usually looks first to see what it is that does not please, that is awkward or worse, then discovers the part of the expression that is wrong, and finally may decide how this is wrong and why by reference to rules and canons of good taste. It is striking that in this as in so many similar judgments the recognition that something is wrong is much more likely to come before the appreciation of what it is that offends. Just as in the simpler comparisons or judgments one can tell that two sensations are different before it is possible to say how they are different. One can say that one tone is different from another before he can say which is higher. In passing on the truth or falsity of an argument it is nearly always the case that one decides the formulation to be incorrect before it can be said what is wrong, and it is only still later that one can say why it is wrong.

The same process can be traced in much the same way as for language in the judgment of a picture, a house, or any work of art. One first is impressed that it is unsatisfactory or inadequate, then turns to the analysis of detail, and finally makes reference to accepted rules of practise, if he knows them, to justify his criticism. The first vague dissatisfaction comes not only first, but much more frequently than either of the others. One is frequently certain that a statue or a sentence is unsatisfactory without ever being able to refer the dissatisfaction to its cause. The occasion for the dissatisfaction is to be found in some group of factors that do not come clearly to consciousness. The same group of associates that cluster around a mental state to give it meaning, also seem to be active in censoring the products of consciousness. They are not of themselves conscious in this activity any more than they are in the meaning, but nevertheless they are the final arbiters of expression, as they are the final determinants of meaning. It is not at all unlikely that the same set of associates that in one case gives meaning to the word or phrase

as it presents itself in the discourse also serves to decide that it is appropriate or the reverse when the expression is censored. Usually the expression merely passes muster; there is even no explicit thought as to whether it is or is not satisfactory; but when some false note is sounded it is usually because a new set of associates different from those which gave it meaning, is aroused to pass upon it. From the standpoint of instruction the most effective means of improving the taste seems to be not in giving rules in explicit formulation, but in acquiring familiarity with the best in expression, with the best literature, with the approved in conversation. This experience and this alone will give the background against which one's own language may be judged. Practise in recognizing solecisms will help, but unless the other background is present, unless there is a wide experience with correct expression, the censorship is likely to be lax or perverted. Rules, too, have their place, but are helpful for the most part only after some skill in detecting inaccuracies has been developed; they are used only to justify a correction or rejection, not to detect it in the first place.

Decision as to whether the meaning is adequately expressed rests upon exactly the same basis and follows the same course. It is much more closely related to meaning than is decision on the grammatical accuracy or esthetic qualities of the expression. If there is conflict between the associates that a phrase suggests and the intention of the speaker, the phrase is immediately rejected. One tries again if the phrase has not been spoken, and may keep trying until some group of words presents itself that satisfies the censor; then expression proceeds. If one is conversing or speaking before an audience, and it is necessary to withdraw the statement, one says, "That is not what I meant" and substitutes another expression, or the meaning is made clear by a series of explanatory statements, that seem to elucidate, but which may merely annul and replace, the original statement. The process of judging is largely concealed; one sees only the result. The experiences that happen to be active at the moment pass upon the statement. One can be sure that these are active only because one sees that phrases that are accepted change with the accumulation of experience. The method by which they pass upon it one can not see. A statement is rejected at once or accepted at once; one only occasionally sees why. So far as the process can be traced, it appears to lie in the fact that when expressed the phrase arouses associates that were not aroused by the intention, or, as was said, it is seen that it might suggest ideas that were not suggested by the intention or the other mental content, whatever it may have been that preceded the speech. These associates are seen not to harmonize with the intention, although the words as viewed in the first way

suggested nothing incompatible with the earlier intention. But the process of deciding whether these associates are or are not in harmony with the intention is exactly the same as that which rejects the phrase. In each case earlier experience passes immediately upon its fitness. Only its effects are seen.

When we seek to determine the conditions which lead to the formulation of the phrases and sentences or larger wholes of speech we find them to be in large part concealed. Ultimately the process resolves itself into a matter of association under the control of the general setting, the intentions and what not that are prominent at the moment. The first association is between the intention and the form of sentence that is to be used. Such a difference as that which gives rise to the indicative or the interrogatory sentence, for example, must depend upon a connection between definite purpose and a definite arrangement of words. There is, of course, no explicit intention to use an interrogatory sentence, but the antecedents which make the speaker desire to obtain rather than to impart information lead to the appearance of the verb before the noun. There is, of course, nothing more than an habitual association between a desire of this sort and the particular arrangement of words, as is evident from the different expression of the question in different languages. The interrogatory mood governs the associations between the single words together with the particular need for information, and an appreciation of the fact that the person present may supply the information is sufficient to start the formulation or expression of the sentence. Once started the connections between the words that have been used before in similar cases, guided always by the wider purpose or intention, serves to carry the sentence to its end.

Similar purposes and intentions serve to determine other matters of form of expression. Thus as Owens has pointed out,[1] there is practically no difference in the ideas expressed by the passive and the active voice. One is chosen rather than the other because of the prominence of one element or another in the thought to be expressed. If the speaker is interested primarily in the thing acted upon, that is made the subject and thereby made prominent; if the agent or the action is of greater interest, that is made the subject. Aside from the immediate intention one finds that a number of other circumstances may play a considerable part in determining the form of speech. Thus the type of all speech, the simple interjection, comes under the influence of emotion. An idea that might be expressed in a full sentence in usual circumstances calls out under surprise or anger or other strong emotion merely the single word, and that in the

[1] Owens, "The Relations Expressed by the Passive Voice," Transactions of Wisconsin Academy of Sciences, Arts, and Letters, XVII., Pt. 1, pages 1–65.

form of an exclamation. Similarly the distance of the hearer makes a difference in the form of expression. What would be expressed at length to one near at hand will be communicated in a word if the hearer is several hundred yards away. The shepherd cries "wolf" to his master, while the summer visitor may express no more in a long and leisurely disquisition on the event to his companion in the stage.

Once a particular form of expression is started in response to the intention guided by the emotional attitude and external condition, the continuation of the expression, whether thought only or expressed, is largely due to associations between the words themselves. In a language spoken fluently no thought is required for a phrase once started. The words fuse by association into larger groups, sentences, or phrases, and these even may associate into groups. One of these groups may be touched off by any appropriate stimulus, and when thus touched off runs to its conclusion of itself without conscious guidance, with no more than the censorship, and even this is aroused only by a mistake of some sort. One returns a greeting, will respond to a remark about the weather without thinking. The set phrase of response is merely associated as a whole with the phrase heard. Much the same relation is established in connected thought and discourse between general intention and special sentence and even between phrase and phrase, always, however, guided by the general purpose that has led one to think and subject to the censorship of past experience as to both matter and form. In the larger aspects, the different ideas suggest one another as large general ideas; each of these may suggest a series of subordinate but still general ideas, and these in turn less general ideas that in turn suggest the particular sentences. The ideas are of the vaguest sort and need not be more than intentions. These finally serve to suggest sentences and then phrases and words.

To go back to the discussion of Wundt's theory, in abstract thought one can not say that language comes as a result of the analysis of an idea present before speech begins. The most that can be said is that there is a general intention first, that this general intention arouses a series of associates in verbal form. The analysis, if present, is only of a logical concept, not of an actually present idea, or of any psychological entity. The results of these analyses are for the most part larger groups rather than single words. The words come by association with one another and with the general ideas. The course of each thought is really much more a development of its meaning than a mere analysis of what was present in it. What develops was in no sense present before the development.

Even if one considers the sort of thinking and speaking that most

nearly follows the description that Wundt sets forth, the description of some object or scene that is held before the mind's eye, the process is necessarily not merely an analysis. If one attempts to recall and describe a scene from the past, even if a visualizer, one will have at first usually a comparatively vague outline of the scene, sometimes only a symbol for it; as he proceeds the different parts of the scene become clear one after the other. It is very difficult to say whether these new elements are analyzed from the mass that is actually present or whether they are added by association with what was thought of before. In most cases the process is at least a mixed one; something is added by association even if something is analyzed from the preliminary idea. One may say quite confidently that in no case is there a preliminary idea from which the different ideas that are represented in the words are analyzed, without being added to or suggested by preliminary ideas.

It is interesting to note also the division that Wundt makes of sentences into two groups, the apperceptive and associative. The one would be constituted by the sentences that correspond to the analysis of a preliminary idea, the other to instances in which subject is added to predicate by mere association. That one in which most comes from the preliminary idea was the apperceptive or closed form, that in which practically all was due to the addition of new elements, the associative or open form. The former was used in abstract thought, the latter in description. We have seen, however, that in practise abstract thought usually is the result of associative additions; description alone shows signs of a preliminary idea that can be analyzed. On the other hand, there is always a preliminary intention, a forewarning of what is to be said in a symbol with a meaning. The development of this meaning constitutes thinking and the formulation of the sentence, processes that go hand in hand. This holds both for abstract thought and for description. The intention at once guides and controls the associations that give rise to subordinate ideas and to their expression in words, and passes upon their adequacy to express the meaning, to carry out the intention. There are differences in the degree in which the associations may be controlled by the purpose, but nothing more. The types of expression are fundamentally one. Classifications, in consequence, are bound to shade into one another rather than to have sharp lines of division.

Nevertheless, the fundamental notions of the nature of a sentence which Wundt holds must be held against the older schools. The unit is a preliminary idea that develops in the sentence, and this preliminary idea or intention is itself determined by wider antecedent intentions and in its turn determines the later and subordinate meanings or intentions; the sentences and the words are subordinated to

all. They are not the units as they have often been made. It is from this fact that the end of the sentence may control the beginning as well as the beginning control the end. No part can be isolated from the whole, and in the whole must be considered the antecedent thought, large masses of earlier experiences, the present environment, particularly the social environment, the emotional as well as the intellectual condition of the individual at the time of speaking.

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INDIVIDUAL DIFFERENCES IN BELIEF, MEASURED AND EXPRESSED BY DEGREES OF CONFIDENCE

THE present study only reports in part results obtained from a series of experiments with common beliefs. Among the classes of material used in related series of experiments are horizontal lines, handwriting, and tones. Complete results of all of these experiments will soon be published. Our diverse kinds of material were employed in an experimental endeavor to give quantitative meaning to the degrees of confidence a person experiences while making various kinds of judgments.

The present investigation throws considerable light on individual differences, especially when a scale for measuring "degrees of confidence" is used. The experiments herein reported afford answers to three problems:

Problems.—1. We may assume that objects, with as great differences between them as one wishes, will be discriminated by every one with absolute certainty. It will also be granted that objects, with sufficiently less differences between them, will be discriminated by every one with something less than absolute surety. The problem then arises: What is the correlation between an individual's "degrees of confidence," and the "differences discriminated" by him? As these differences become larger, will his increasing confidence-strength in their discrimination be nicely graduated to the increasing objective differences? What differences are here found among individuals? What are the probable causes of such individual differences as appear?

2. Does the correlation, in the case of an individual, between "degrees of confidence" and "differences discriminated," bear a significant relation to a correlation (in the case of the same individual) of his judgments of discrimination and those of a large group of persons? That is, does an individual's high or low approximation to a social standard bear any definable relation to his own correlation of *confidence* and *discriminated difference*?

3. Can subjective confidence be defined and quantitatively measured in terms of objective differences discriminated? This problem has a special significance with reference to the highly subjective material (beliefs) of our experiment.

Material.—Twenty-five beliefs, or statements (as we prefer to call them), were selected in the following manner. Dr. E. K. Strong had recast and revised sets of beliefs, used in previous investigations: he had a usable set of about fifty. From this set the author drew twenty-five by chance. Three of those drawn, which Strong had found to be uncertain in their behavior, were exchanged for three others. Our twenty-five statements, with their identification numbers, follow.

2. "There exists an all-wise Creator of the world."
3. " Easy come, easy go."
4. " Traffic in alcoholic beverages, except for medicinal purposes, should be nationally prohibited."
5. " Only the good die young."
9. " For the benefit of the individual an eight-hour working day should be strictly enforced."
10. " Breaking a mirror brings on seven years of misfortune."
11. " See a pin and pick it up, and all the day you'll have good luck."
12. " The happiest life for woman is the married life."
13. " The maternal instinct is strong in most women."
15. " Geo. Washington was a real person."
17. " Virgil wrote the ' Æneid.' "
21. " Our Republic will endure another hundred years."
22. " $2+2=4$."
23. " $2+4=7$."
24. " The moon is larger than Jupiter."
26. " The earth is practically round."
33. " Christianity is losing its influence in this country."
34. " The people of the world are becoming better."
35. " It would benefit the majority of young men to attend college."
37. " Women should have the vote."
39. " Music more nearly approaches the divine than does poetry."
46. " Death ends personal existence."
47. " The whale swallowed Jonah."
48. " Man is free to work out his own salvation."
50. "Blessed are the meek, for they shall inherit the earth."

Conduct of the Experiments.—The subjects for these experiments were thirty-five students of Barnard College, members of Professor Hollingworth's classes in experimental psychology; all had had considerable experience in similar kinds of work.

In the first experiments, the girls arranged the twenty-five statements in an order of belief-strength. The Order of Merit Method was employed. Most of the subjects had two trials, separated by about a week. In no case were they aware that a second trial was to

follow the first. Each student was given a set of the statements, with the following directions:

BELIEF

Arrange these in an order; first select the one you *believe the most.* Second, select the one you *believe next strongly,* and so on, until the one you *believe the least* is selected last.

The second experiment was conducted by the elaborate Method of Paired Comparisons; that is, every statement was compared with every other, by each of the thirty-five subjects. Thus, with the twenty-five statements there were *three hundred* comparisons or "tests." Each subject was provided with blanks, on which were printed the identification numbers of the tests in order, from 1 to 300. Duplicates of the statements were provided, so that each subject had ready at hand the "three-hundred-comparison-test" material,—three hundred cards, to each of which was fastened two statements to be compared. To avoid a possible space error, the positions of identical statements on successive cards were changed. For example, the card for Test No. 1 had statement 2 on the left side and statement 3 on the right; but the card for Test No. 2 had statement 4 on the left and statement 2 on the right side. The usual way of conducting an experiment by the Method of Paired Comparisons was followed.[1] The written instructions were as follows:

These statements are to be compared according to the *strength* of your *belief* in them.

1. In each of the 300 comparison-tests, to the right of each test-number (on blank provided), record the number of the statement in which you *believe* the *more.*

2. Then,—using the scale for Degree of Confidence,—also record your *degree of confidence* in your decision.

The scale of confidence employed was derived from similar scales of other workers. The form of our present scale, while embodying all of the merits of earlier scales, has this advantage: a definition of each degree of confidence in three different ways, together with at least *a priori* equal differences between each of the four degrees. Even before beginning the experiments, the author did not think that the different degrees of confidence would mean the same to any two subjects, or that any one person would be able, in the actual experience of an experiment, to hold (subjectively) to the *a priori* set equal degree-differences of the scale. Those who took part in the experiments were instructed to hold to the defined conditions of the scale as closely as possible. Any person, after a very little experience with the scale, came to attach his own subjective and precise meanings to each degree of confidence, and consistently to maintain

[1] Titchener, "Experimental Psychology, Student's Manual, Qualitative," pages 92–95.

his own set differences between each step (unequal as these differences often were).

The scale follows:

DEGREE OF CONFIDENCE

Use a scale of *four degrees*, as follows:

0 = A mere guess. Lack of confidence.—Absence of any surety.
1/3 = 33 1/3 per cent. surety.—Somewhat certain.—Some confidence of being right, but faintly so.
2/3 = 66 2/3 per cent. surety.—Very certain.—Reasonably sure. Considerable confidence of being right.
3/3 = 100 per cent. surety.—Absolutely certain.—As strong a confidence as one would have under these particular conditions.

Calculations of Results.—The results of the second experiment, that by the Method of Paired Comparisons, were calculated in the usual way. In the course of the 300 tests, each statement appeared equally often, and thus had a chance of being chosen in preference to any of the others. The statement that was chosen or "believed the more" the largest number of times by any one subject was ranked first in her *scale of belief-strength* (such we may call it, in so far as the 25 statements used are concerned); that statement which was preferred the next to the greatest number of times by any subject was ranked second in her *scale of belief-strength;* and so on, with the times preferred of the 25 statements, the one preferred the least number of times (or not at all) being ranked last or twenty-fifth in the individual's *scale of belief-strength.* Thus, by an elaborate series of tests, a scale of *belief-strength* was obtained for each of the thirty-five subjects. We then turned back to the original records, on the filled-out blanks of 300 tests each. In this case we were not concerned with the particular statement chosen in each case, but with the *degree of confidence* attached to that choice or decision (see "written instructions," above). Now, what is meant by saying that a certain degree of confidence is "attached to a decision"? There is a discrimination of difference, with reference to any two statements involved in any one of the 300 tests. The confidence is not attached to the belief chosen, for had that same chosen belief been compared with some other one (more like or more different), the confidence would have been different in many cases. Thus, "2 + 2 = 4" being compared with "2 + 4 = 7," the confidence will be "3/3," or "3," in most cases; but if "2 + 2 = 4" is compared with "The earth is practically round," may not the confidence be often less than absolute? As a matter of fact, it generally was. Therefore, if the confidence is not attached to the statement chosen, we must say it is attached to both of any two compared, that is, to the difference that a person discriminates between them. To ascertain what any such dif-

ference discriminated (or "paired comparison rank difference," as we shall hereafter call it) is, we have only to refer to our subject's scale of belief-strength (described above). Consequently, the procedure was as follows. A tally sheet was prepared for each girl, with P. C. (paired comparison, rank differences ranging from 0 to 24, the greatest possible difference in any individual's scale of belief-strength. The beginning of such a sheet follows:

SUBJECT 1. TALLY SHEET

P. C. Rank Differences	Degrees of Confidence	Average Confidence
0	0000 111 22	0.78
0.5		
1.0	000 11111	0.63
1.5	0000 11 22	0.75
2.0	0000 11111111111111 22	0.90
2.5	000 1 2 3	1.00
3.0	00 111112222 3	1.33

The Degree of Confidence (in one and all of the 300 tests) was first noted (it being 0, 1, 2, or 3). This Confidence was put on the tally sheet opposite that P. C. Rank Difference, which was the difference between the two statements compared, as ascertained by subtracting the ranks of the two statements on the subject's scale of belief-strength. We thus treated the confidence in each of the 300 tests, for any one individual. (The results of each person were computed without reference to any other.) Since several pairs of statements would have the same Rank Difference, in any one's scale of belief-strength, there are generally several entries (on the tally sheet) under Degrees of Confidence for each P. C. Rank Difference. Thus (above) for Difference 0 there are nine entries, for Difference 1.0, eight, etc.

Thus any one of our tally sheets has two significant columns, the first and the last (see above): (1) a column of *rank differences,* and (2) a column of *average confidences,* one for each rank difference. We next correlated these average confidences with the rank differences, or "differences discriminated" (see Problems, 1, above). This was done for each subject separately, without reference to any one else's records. In making the correlations, the following formula was used:

$$r = 1 - \frac{6(\Sigma d^2)}{n(n^2 - 1)}.$$

The results are given in Table I.

In addition to the above correlations of each subject, without reference to any of the others, the *median* confidence, for all of the subjects, for each rank difference, was calculated. These *median confidences* and *rank differences* were correlated, with a resulting coefficient of + .956.

TABLE I

Correlations of Degrees of Confidence and Differences Discriminated
These Coefficients of Correlation are All Positive

S	r	S	r	S	r	S	r	S	r
7	.705	31	.833	5	.863	34	.896	29	.920
3	.750	27	.846	14	.864	28	.900	32	.921
21	.791	24	.851	13	.872	30	.903	22	.927
10	.809	11	.853	25	.879	18	.905	2	.928
9	.816	15	.854	16	.881	1	.906	17	.933
35	.817	20	.854	12	.887	4	.911	33	.948
19	.828	6	.854	23	.891	26	.911	8	.961

"S" refers to the subjects, by identification numbers.

With reference to the second of our problems (see above), a "social standard" or position for each of the twenty-five statements was obtained in the following manner. Seventy-four different persons judged the statements, or ranked them in order of belief-strength. Both the Order of Merit and the Paired Comparisons methods were used. There were 146 judgments concerning (or rankings of) *each* of the 25 statements,—3,650 judgments in all. Our result was a group or "social" position for each statement. This position, in the case of each statement, was the *median* of the 146 rankings of that statement. Thus we secured 25 "group medians," our "social standard."

For each of the 35 persons the rankings in the one or two trials by the Order of Merit Method were averaged with the rankings of the set of statements secured as a result of the Paired Comparisons experiment, to secure, for each subject, an average, individual position for each belief. For each observer, then, her average order of ranking of the 25 beliefs was correlated with the "group medians" (described in the above paragraph). We thus found each individual's high or low approximation to a fairly reliable social standard. For the purposes of the present report, these coefficients need not be given.

We have now secured two sets (of 35 each) of coefficients of correlation, the one last mentioned, and that of Table I. (above). Each individual has two coefficients, one measuring her "tendency towards concomitant variation" of confidence and discriminated difference, the other measuring the same relation with respect to her approximation to a social standard. To secure a quantitative answer to the second problem,—the two sets of coefficients (with measurements of the two traits in question for each of the 35 observers) were correlated. The resulting coefficient was —.035, or practically zero. That is, under the conditions of this experiment, the two traits are absolutely devoid of correlation. We are warranted in saying that an individual's nicely graduated increase of confidence to corre-

spond to a graduated increase in her differences discriminated, will *not* enable us to make any inference whatsoever regarding the fact of her high or low approximation to the social standard of her fellows.

There yet remains the third problem: with the highly subjective material used, can subjective confidence be quantitatively measured in terms of objective differences discriminated? I believe I am able to show that it can. The reader should refer back to the part of a sample tally sheet. The procedure was to ascertain the *differences discriminated,* or *"rank differences,"* corresponding to the *median* of the *average confidence* (for each subject). In the tally sheet, these average confidences are found in the last column. Zero confidence was defined as any degree of confidence from 0 to 0.99 (thus including such figures as, "0.78," "0.63," etc.); confidence 1 was defined as any degree from 1 to 1.99 (thus including such values as, "1.00," "1.33," etc.); confidence 2 was defined as any degree from 2 to 2.99 (inclusive); and confidence 3 was the highest possible degree. Now, average confidence zero has a range of from 0.00 rank difference to difference 3.5 (not all to be seen in the part of the sample tally sheet given). In the case of the same subject, average confidence 1 has a range of from rank difference 2.5 to 6.00 (with a median at 5.00). Average confidence 2 has a range of from difference 4.00 to 15.00. Average confidence 3 has a range of from 10.00 to 24.00 (the highest difference discriminated in the case of this subject). In her case, the rank differences corresponding to the medians of each degree of average confidence were as follows: confidence 0, 1.5; confidence 1, 5.00; confidence 2, 9.00; and confidence 3, 18.25. In the same way, median rank differences for each of the four degrees of confidence, for each subject, were obtained. Thus, for each degree of confidence, we have a series of 35 (the number of subjects) median rank differences. For each series, the median and the mode were found, which values may be regarded as *objective* measures of the subjective degrees of confidence. Table II gives the facts.

TABLE II

Subjective Confidence Defined in Terms of Objective Differences Discriminated

Degrees of Confidence	Medians	Modes	Q.
0	1.50	1.50	0.50
1	4.25	3.50 and 4.00	0.88
2	10.50	11.50	1.50
3	18.00	17.75	1.13
Differences Between Confidences			
0 and 1	2.75	2.25	
1 and 2	6.25	7.75	
2 and 3	7.50	6.25	

Thus, with the persons tested, we see that, quantitatively and objectively, the steps taken in passing from any degree of confidence to the degree next higher are very unequal. A problem arises at this point, which we will not attempt to solve. Assuming the logical soundness of the statement: "That we pass by degrees from one thing to another, is no sign that the things are of the same nature,"—we may doubt whether the different degrees of confidence are of the same nature. But especially does this become a significant problem, in the light of the great inequality of differences between the degrees.

I believe that it has now been shown that confidence can be *objectively* defined. An objection may arise as to the use of the word "objectively," to refer to an individual's scale of discriminated differences (in terms of which are the medians and modes of Table II.) in connection with such subjective material as beliefs. While, it may be urged, a certain belief is chosen the greatest number of times (in the Paired Comparisons experiment) and ranked first, another is chosen a next fewer number of times and ranked second, and so on, until the one chosen least often is ranked last,—the one ranking first *could* be preferred say 24 times, the second in rank could be preferred say 23 times, but the one ranking third *could* be chosen only 17 times (provided none were preferred 18, 19, 20, 21 or 22 times), while the fourth in rank could be chosen *any* number of times—less than 17, not to mention the possibilities of several statements each being chosen the same number of times. Clearly, in such cases, an individual's scale would be anything else than "objective" (in the sense that a foot-rule, for example, is an objective scale). To show that this very legitimate objection is groundless in the present study, we tabulated the number of times that each belief (of course regardless of what particular one it might be) was chosen by each subject—in order, from largest to smallest number of times preferred. For Subject No. 1, for example, the order of times preferred is as follows: 24, 23, 22, 21, 19, 18, 18, 17, 17, 15, 13, 12, 12, 12, 11, 10, 8, 5, 5, 5, 4, 3, 3, 2, 1. It is seen that the steps of this scale are about equal, though this particular individual had more identical numbers of times preferred than most of the thirty-five. The order of times preferred of all the subjects was strikingly similar. Average times preferred for each step (of the 25 in all of the subjects' scales of discriminated differences) were computed. These averages, with their average deviations are found in Table III.

Thus our *average* scale of discriminated differences in terms of times preferred clearly shows that the material employed afforded a scale of steps very nearly equal. While this measuring-rod is not as absolutely "objective" as a foot-rule or a pair of balances, I think we are justified in using the word "objective" and in concluding that,

even with such material as beliefs, subjective confidence can be measured and defined in terms of objective differences discriminated.

TABLE III

Average Times Preferred	A. D.	Average Times Preferred	A. D.
23.95	0.10	11.20	0.67
22.83	0.28	10.03	0.33
21.77	0.40	9.11	0.40
20.74	0.50	8.09	0.42
19.37	0.57	6.89	0.51
18.46	0.65	5.91	0.47
17.37	0.58	4.91	0.47
16.74	0.53	4.00	0.34
15.94	0.54	3.31	0.47
15.17	0.47	2.57	0.55
14.23	0.40	1.40	0.53
13.29	0.65	0.34	0.46
12.37	0.75		

We are now in a position to consider more carefully certain aspects of the first problem. The conclusions reached are summarized in Table I. (above). In this table we have positive proof of a very high correlation between *degree of confidence* and *difference discriminated.* As such differences become larger, increasing confidence-strength in their discrimination is nicely graduated to the increasing objective differences. Such is the accepted meaning of a coefficient of correlation. In no individual do we find a low degree of confidence for a small difference, remaining low, until the objective difference has grown to considerable proportions, and then "jumping" to a higher degree; on the contrary, the mutual relation is one that is "nicely graduated"; the tendency is towards concomitant variation.

So much for any and all of the subjects. In the statement of our problems (above), the question was also asked, "what differences are here found among individuals?" Table I. (above) shows these individual differences at a glance. The coefficients range from $+.705$ to $+.961$, with a median at $+.879$. While the individuals arrange themselves in a fairly continuous series, the difference between the extremes is large enough to warrant an attempt at answering the further question (set in the statement of problems): "What are the probable causes of such individual differences as appear?" At the present stage of our investigation, and with the very inadequate knowledge of individual differences in general, only a probable and tentative answer can be now given.

As a possible cause of these differences among individuals, we may consider individual scales of belief-strength (or rank differences), with which the average confidences were correlated. Perhaps different people had such scales of very unequal steps (as determined

by the number of times the different beliefs were chosen in the paired comparisons experiment), that our resulting series of coefficients were thereby caused to differ (Table I.). Table III. (above), and its explanation, proves that such was by no means the case. On the contrary, the "A.D.'s" of Table III. clearly prove that the thirty-five observers had scales of belief-strength almost identical at each step.

As another cause of the individual differences of Table I., it might be thought that the subjects gave the different degrees of confidence rather different values (as objectively determined in Table II.); it will be remembered that we there measured confidence in terms of objective differences discriminated, or "rank differences." The reader, at this point, should refer back to the discussion immediately preceding Table II.

For each subject, the A.D. of the average difference between the objective rank differences for each of the four degrees of confidence (of that subject), gives a measure of *how unequal* were the steps between the four degrees—of *how different* were the objective values assigned to each degree. The larger the A.D., the greater is the inequality of the degrees with reference to each other. The smaller the A.D., the more equal are the steps from one degree to each succeeding degree. Will persons differing widely in this respect reveal a corresponding individual difference, as shown in Table I.? To obtain a quantitative answer, the thirty-five A.D.'s (one for each subject) secured were correlated with the coefficients of Table I. The resulting coefficient was —.02. Again we have failed to find a cause for our individual differences.

The fact that, by nature, some individuals are more conservative and others are more radical and confident in most of their decisions, may possibly explain the individual differences in question. From the definition and construction of our scale of confidence we may assume that a *conservative* person would, when making his judgments, set Confidence 3 at a much greater distance from Confidence 0, than an individual of more *radical* turn of mind—one inclined to be absolutely sure of most of his opinions and beliefs. Therefore (the reader should again refer back to the discussion immediately preceding Table II.), the conservative person would show the *greater* differences between the objective rank differences of confidences 0 and 3 (the extremes of the scale); and the radical individual would show the *less*. Perhaps the individual differences of Table I. may be partly due to some of the observers being more radical or more conservative (in the sense defined) than the others. To determine this —for each subject—the objective values secured for confidences 0 and 3 were subtracted. The 35 results (forming a series, measuring the trait in question for all of the subjects) were correlated with the

coefficients of Table I. The resulting coefficient was + .435. This figure is not high enough to afford positive proof that we have discovered a cause of the individual differences; it does show a tendency for the more conservative persons to have the higher coefficients (Table I.). Further investigations are needed, with this and other material, that we may follow up this very possible cause of individual differences.

Summary of Results.—First problem: 1. A high degree of correlation was found between an individual's *degrees of confidence and differences discriminated:* increasing confidence-strength is nicely graduated to increasing objective differences. The coefficients of correlation range from + .705 to + .961, with a median at + .879; when the median confidences (for all of the subjects) are correlated with the differences discriminated, the resulting coefficient is + .956.

2. The range of values for the coefficients, just mentioned, show marked individual differences.

3. As to the probable causes of these individual differences: it is found,—first, that inequality of the steps in the individual scales of belief-strength can not be regarded as a cause,—second, it is seen that persons differing widely as far as giving the different degrees of confidence different objective values, do not reveal a corresponding individual difference,—third, a coefficient of + .435 shows a tendency for the more conservative persons (in the sense defined) to have the higher coefficients (Table I.), but further investigations must follow up this possible cause of individual differences.

Second problem: 4. Under the conditions of this experiment, an individual's nicely graduated increase of confidence to correspond to a graduated increase in differences discriminated, will *not* enable us to make any kind of inference regarding the fact of her high or low approximation to a social standard.

Third problem: 5. We find that subjective confidence can be quantitatively measured in terms of objective differences discriminated, even with such material as common beliefs. The amounts of difference between the four degrees of confidence are as follows: between 0 and 1, 2.75; between 1 and 2, 6.25; and between 2 and 3, 7.50 (Table II.).

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REVIEWS AND ABSTRACTS OF LITERATURE

Les Arriérés Scolaires: Conférences Médico-Pédagogiques. MARCEL NATHAN et HENRI DUROT, avec la collaboration de M. GOBRON et de M. FRIEDEL. Paris: Librairie Classique Fernand Nathan. 1913. Pp. vi + 361.

The problem of the backward child has, during the last few years, attracted a great deal of attention in educational circles in this country. Statistics compiled by the United States Bureau of Education some years back called attention to the magnitude of the problem. The investigation conducted by the Russell Sage Foundation and published by Dr. Ayers under the title "Laggards in Our Schools" shows that nearly one third of the pupils attending the public schools of the United States are more than two years behind in the development which is expected by the curriculum. Of course it is not true that all of these children are suffering from arrested mental development in the neurological sense of the phrase, but physical defects are present in a large number of cases and it is quite necessary that pupils who need special care should be picked out by the principal or the teacher and proper medical treatment secured.

The work before us is admirably adapted to meet the needs of the situation. There is a lucid presentation of the normal structure and functions of the central nervous system given in the opening chapters. Many teachers who might attain sufficient knowledge in this field to be of service to the school are deterred by the complexity and the difficulty of the subject. It would be difficult to find a simpler presentation of the essentials. The opening chapters are followed by a similar brief but lucid statement of the more prevalent forms of nervous disorders. The closing chapters deal with the practical applications of the truths developed in the earlier chapters. An English translation of this work would prove serviceable.

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The Learning Process. STEPHEN SHELDON COLVIN. New York: The Macmillan Company. 1911. Pp. xxv + 336.

One of the best books on those phases of psychology which apply to education is that by Professor Colvin on "The Learning Process." Besides treating of the fundamental elements in the learning process and applications of the general principles, the author gives the latest work done in connection with habit formation, perception, imagination, memory, association, and transfer of training. The author does not attempt to present any theories of his own, but simply gives, in an impartial manner, the results of recent research on the topics in question. The book is along the same lines as Bagley's "Educative Process" (but somewhat more up-to-date), and as Sandiford's more recent volume on "The Mental and Physical Life of School Children." Professor Colvin is especially strong in his treatment of children's testimony and perceptions, of memory and the transfer of training. He is weaker in his consideration of

attention and interest, a vast amount of literature being here overlooked. But, since Dr. Colvin follows Titchener and Stout in this field, his work can not fail to be good. For classes working in applied psychology, educational principles, or the theory of study and learning, the book can not well be neglected. For the practical teacher, likewise, much practical information and a great many sound directions are given. Further comment on Professor Colvin's book seems unnecessary, inasmuch it is now considered a standard, and is in the hands of most of the progressive students of education.

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NEW YORK CITY.

JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. January, 1915. *Sensations of the Alimentary Canal* (pp. 1–57): EDWIN B. BORING. – Warmth, cold, mild pressure, heavy pressure, electrical, alcohol, hydrochloric acid, oil of peppermint, mustard and pepper stimulations. The esophagus is sensitive to all the above stimuli. The rectum responds to alcohol and hydrochloric acid, but the mechanical stimulations call for defecation. The anus is sensitive to all stimuli. *A Note on the Retention of Acquired Capacities* (pp. 58–67): F. L. WELLS. – A number of tests were repeated after five and two years had elapsed with the result that the processes had slowed up very much which, in practical life, is often equivalent to what is known as "making mistakes" or "forgetting." *On Psychology as a Science of Selves* (pp. 68–198): JOSEPHINE NASH CURTIS. – A thorough analysis of Miss Calkins's self-psychology is presented. James's views of the self are clear, but do not apply to Miss Calkins's self which is considered inferior, ineffective, and inconsistent. *An Experimental Study of Sensory Suggestion* (pp. 99–129): A. S. EDWARDS. – Visual, smell, taste and temperature, auditory and tactual suggestions were given. All but hearing and touch are highly effective. *Psychoanalysis and the Study of Children and Youth* (pp. 130–141): DR. O. *Pfister,* translated by F. M. SMITH. – The differences in the opinions of psychoanalists are really complementary to each other. Exaggerated views will be smoothed down and much good will come to child study. *Minor Studies from the Psychological Laboratory of Cornell University. On the Localization of Pure Warmth Sensations* (pp. 142–150): F. L. DIMMICK. – The average errors are greater for warmth than for touch. *Form versus Intensity as a Determinant of Attention* (pp. 150–151): L. G. MEADS. – A crude method is presented for judging the attention value of light forms *versus* light intensities. *The Determination of the Limens of Single and Dual Impressions by the Method of Constant Stimuli* (pp. 152–157): E. J. GATES. *Book Notes* (pp. 158–159).

Henning, Hans. Ernst Mach als Philosoph, Physiker, und Psycholog. Leipzig: Verlag von Johann Ambrosius Barth. 1915. Pp. xviii + 185. 5 M.

Ladd, George Trumbull. What Ought I to Do? New York: Longmans, Green, and Company. 1915. Pp. vii + 308. $1.50.

NOTES AND NEWS

AT the meeting of the Aristotelian Society held on January 4 "Professor C. Lloyd Morgan read a paper on 'Notes on Berkeley's Theory of *Esse*.' The well-known doctrine of Berkeley, that *esse* is *percipi*, finds expression in recent philosophy in what Professor Perry has named the 'ego-centric predicament.' A comparison was made between Berkeley's attempt to account for continuity by the theory of continuous existence within the mind of God, and the attempts of the new realism to relate sensibilia. It was suggested that the distinction between relatively perceptual cognition and the higher order of knowledge which involves conceptual terms could be best expressed by applying the term 'meaning' to the former, and the term 'significance' to the latter. Significance, then, indicates a higher level of meaning. Probably all presentations from infancy onwards carry some fringe of significance. A presented fact which carries significance is in relation to some term within the sphere of our thought, which we may call a supposal, and that which answers to the significant term in the order of nature is what we call a truth. When there is a supposal in mind, it has the relation of reference, more or less valid, to some truth in the order of nature to be interpreted.

"After noticing Berkeley's nominalism and his constant tendency to advance from his earlier position and develop the notion of spiritual substance, Professor Lloyd Morgan suggested finally that the solution of the problem of continuity might be found in a threefold order of relatedness—physico-spatial, vital, and psychical. Each was a mode of scientific explanation, the question of source not being involved. As each new order was reached an added character entered into the relation and became effective. The higher always implied the lower, but to invert the order was impossible.

"This was in keeping with the essential spirit of Berkeley's philosophy. It was his merit that he applied his principles consistently; and while he proclaimed that every effort which can be naïvely observed or significantly interpreted is dependent on the Eternal Spirit as the ultimate source of all that exists, he left to science, as he understood it, a perfectly free hand to pursue its investigation of phenomena on its own special lines."—*Athenæum.*

A COURSE of six lectures on the international crisis in its ethical and psychological aspects has been inaugurated at Bedford College, London. This course has been arranged by the council of Bedford College in cooperation with the Committee of Imperial Studies of the University of London. At the first lecture Viscount Haldane was in the chair and Mrs. Henry Sidgwick spoke on the morality of strife in its relation to the war. Lectures will also be given by Professor Gilbert Murray, Dr. A. C. Bradley, Dr. L. P. Jacks, Professor Stout, and Dr. Bernard Bosanquet.